pril, 1926 Extension Circular No. 158

Feeding For Egg Production *and* Fattening Fowls

A GOOD TYPE EGG LAYING HEN. LAID 1,293 EGGS IN HER LIFE. BRED AND OWNED BY THE NORTH CAROLINA STATE COLLEGE.

NORTH CAROLINA
STATE COLLEGE OF AGRICULTURE AND ENGINEERING
AND
U. S. DEPARTMENT OF AGRICULTURE, CO-OPERATING
N. C. AGRICULTURAL EXTENSION SERVICE
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RALEIGH

DISTRIBUTED IN FURTHERANCE OF THE ACTS OF CONGRESS OF MAY 8 AND JUNE 30, 1914

What, When, and How to Feed for Eggs

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In order to get winter eggs it is necessary that the hens be culled for breeding, that they have a modern house, and that they be given the right kind of feed and attention. The breeding hens and growing birds should have at least one acre pasture for each 100 birds.

Grit: A hen needs grit to grind the feed. The feed is ground in the gizzard. The grain and mill feeds are short of certain minerals and limestone grit furnishes some of the mineral shortage and is used to make the egg shell. When limestone grit is given oyster shell is not needed.

Vital Matter: Certain vital elements are required by the bird in order that it can live, build up the body and make growth, and that the eggs may be fertile and capable of hatching strong chicks. It is therefore best to furnish each hen with one-half to one ounce tender green feed a day and allow the birds to run outdoors in the sunshine. Green feed may be grown outdoors and will serve as a pasture for the hens until it becomes too tough. Rape and oats make a late summer, fall and spring pasture. Soybeans or cowpeas during the hot summer and mangles, turnips, collards or cabbages during the winter. If you want winter eggs you must have pullets and give them spring-time conditions and feed.

Minerals: Certain minerals are short in the poultry feeds as grain and mill feeds. To make good these minerals we add to the laying mash for hens four pounds bone meal or four pounds finely pulverized limestone; also one pound table salt. The table salt must be thoroughly mixed with the mash and no more than one pound used or it may hurt the birds.

Do not feed velvet beans or velvet bean meal in any amounts to poultry. It will hurt them. Do not feed more than ten per cent. cottonseed meal in the mash. You can feed soybean meal or peanut meal in the mash, but it is too expensive. Fish meal, meat meal, or milk is necessary if you want to get eggs. You can not get many eggs without it. Neither can you get many eggs by feeding just corn alone or only grain feeds. Mash is necessary. The following is the North Carolina mash formula:

NORTH CAROLINA LAYING MASH

Bone meal (or pulverized limestone)	4 pounds
Table salt	1 pound
Corn meal	35 pounds
Wheat middlings	20 pounds
Pulverized oats	20 pounds
Fish meal (or meat meal)	20 pounds
Total	100 pounds

Each one hundred hens requires five gallons of milk a day to entirely replace the fish meal. Some use wheat bran in the same amounts as wheat middlings, but it is low in digestibility. Some feed finely pulverized alfalfa leaves where green feed is impossible to get, but when used only five per cent. should be added to the mash.

The mash should be kept in a dry mash hopper and before the birds at l times so they can eat what they want. The dole system will not do. hen hens have laid all year they are tired and they molt in the fall and ow new feathers, but they must still have the mash and rest for a few eeks to build up their bodies for the next year's work.

In addition to the mash the birds must have grain. Barley may form n to twenty per cent. of the grain mixture and rye ten per cent. Too uch rye causes looseness of the bowels. Cracked soybeans, peas, or rghum seed may be used in the same amount. Other grains have also en used.

The following is the North Carolina grain feed formula:

NORTH CAROLINA GRAIN MIXTURE

Corn (preferably yellow)	50 pounds
Oats (heavy)	30 pounds
Wheat	20 pounds
Total	100 pounds

Each twelve hens should have one pint in the morning and the same in he evening. Slightly more may be fed in cold weather than in warm eather.

Sixty-five per cent. of the egg is water and the bird needs water for ther purposes. It is therefore necessary to keep pure, clean water before he hens at all times.

HOW TO FATTEN FRYERS

Crate fatten fryers and hens before selling on the market. A cool shed nakes a good location. Coops may be made thirty inches square with one nch mesh chicken netting as floor. Shavings put under the coops absorb droppings which are later used as fertilizer. A trough hooked on outside s used for the feed. The chickens should be fed three times a day. Give hem only what they will clean up in thirty minutes. The following is the North Carolina fattening ration:

Corn meal	50 pounds
Pulverized oats	50 pounds
Total	100 pounds

Mix two pounds buttermilk or clabber milk to each pound mash at feed- ng time. If milk can not be had, add fifteen per cent. meat meal and wet vith water at feeding time. Fatten fourteen days.

A gain of forty to sixty per cent. should be made in fryers in two veeks, twenty to thirty per cent. for stags and fifteen to twenty per cent. or hens.

GRAZING CROPS FOR POULTRY

Grazing crops can be provided most of the year for poultry in North Carolina. In part of January and February, and this especially holds in he mountain section, it is necessary to either sprout oats or provide nangles or turnips. For best results in egg production, birds must be provided with succulent feed.

The following tabulation will be found useful information for the beginner:

Crop.	*When Sown.*	*Amount of Seed Per Acre.*	*Grazing Stage.*	*Period Dura*
Peas and Oats	April 15	1 bu. peas, 2 bu. oats	May 20	Until full g
Rape	May 10	3 pounds	8 to 10 inches high	Until consur
Red Clover	August 20	12 pounds	May 15	Until fed do
Turnips	August 20	3 pounds	September 20	Until snow i
Buckwheat	May 10	1 bushel	In six weeks	Until mature
Soybean	May 10	1 bushel	12 inches high	Until mature
Rye and Crimson Clover	September 1	1 bu. rye, 15 lbs. clover	Graze early winter and spring.	
Oats	September 1	1 bushel	Graze early winter and spring.	
Sweet Clover	August 15	25 pounds	6 to 10 inches high	Until fed do
Mammoth Prize Long Red Mangles, Orange Globe Mangles	May 1	8 pounds	For winter use.	

Oats may be used for either summer or winter grazing. Rape may be raised spring, summer and fall if there is sufficient rainfall. Soybeans and cowpeas can be raised spring, summer and fall as a yard rotation crop if there is sufficient rainfall. Turnips and mangles make the best root crops for winter feeding. Collards and cabbage, as well as lettuce raised in cold frames, also make excellent succulent feed. In raising mangles it is best to plough the ground deeply in the fall. The freezing will pulverize the ground and tend to make it in better condition for the crop. Good black loam soil is the best. The ground should be manured. If manure is not available, fertilize by distributing 400 to 500 pounds fertilizer to the acre. Plant the mangle seed in rows 2½ to 3 feet apart, sow thick, later thin out, leaving one strong beet stock to each 10 inches. The rows should be ridged, the top of ridge being about two inches above the surface of the ground. The seed should be planted about one inch deep. Gather the root crops as late in the fall as possible. Bury in the ground until ready to use them. To do this, place about six inches of straw on the ground, then pile or make windrow, cover mangles, or turnips, with about six inches of straw or hay and cover with dirt. In securing the dirt take that close around the piles of roots so that there will be drainage away from the pile and thus keep dry. The roots thus prepared should keep till January and February, when they are most needed. During the fall and early winter grazing crops may be used.

OFITS IN HOGGING DOWN CORN

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COMPARATIVE RETURNS FROM AN ACRE OF CORN ON YOUR FARM

ing Yields of from 20 to 60 Bushels, at Prices Varying from $0.80 to $1.10 per Bushel

COMPARED WITH HOGGING DOWN

Hogs Selling at $9.00, $10.00, $11.00, and $12.00 per 100 Pounds

ures on the reverse side are based on a cost of $14.00 for overhead, fertilizer, and horse or mule
l two and one-half days man labor at $2.00 per day, or a total cost of $19.00 to produce an acre
ady to harvest.
puting the cost of hogging, an extra day is allowed for moving the hogs and filling the self feeder
meal or tankage; a self feeder requires occasional attention.
mount of Gains per Acre" is based on the average results of many experiments, and with fairly
ogs averaging from 100 to 125 pounds, variation from the figures given will not be wide.
mputation is based on 7 bushels of standing corn and 34 pounds of tankage per 100 pounds gain.
meal or tankage is charged at $70.00 per ton, and is necessary for the results indicated. Some
be saved by supplying it in a self feeder.
the corn is sold as corn, a charge of $0.12 per bushel is made for harvesting, shucking and cribbing.
the above cost figures should be changed, if necessary, to fit conditions existing on any farm
sideration—The main idea is to *Figure!*

EXAMPLE

F CORN YIELDING 35 BUSHELS HOGGED HOGS $12.00 PER 100 POUNDS

CREDIT		
nds gain @ $12.00		$60.00
DEBIT		
, taxes, fertilizer and horse labor	$14.00	
s man labor in field @ $2.00	5.00	
nan labor moving hogs	2.00	
fish meal @ $3.50	5.95	
		26.95
rns over feed and labor cost		$33.05

eturns per Day of Man Labor—$11.44

1 ACRE OF CORN YIELDING 35 BUSHELS SOLD

CREDIT		
By 35 bushels of corn @ $0.80		$28.00
DEBIT		
To interest, fertilizer, and horse labor	$14.00	
To 2½ days man labor @ $2.00	5.00	
To harvesting and shucking 35 bus. @ 12 cents	4.20	
		23.20
Returns over cost of production		$ 4.80

Difference in Favor of Hogging—$28.25

g 1925 hogs properly fed and sold at the right time averaged $13.00 and returned $2.10 per bushel

Agricultural Extension Service of the State College of Agriculture and U. S. Department of Agriculture cooperating.
ub, Director, Raleigh. Distributed in furtherance of the Acts of Congress of May 8 and June 20, 1914.

COMPARATIVE RETURNS FROM AN ACRE OF CORN

HOGGED DOWN								HARVESTED			
When yield per acre is—	The amount and cost of supplement will be—	Feed cost of gains. Total and per 100 lbs. will be—	Amount of gain will be—	At the following prices— Price	Value	Returns for the acre of corn will be—	Returning above feed and labor cost—	Paying for each day of man labor—	If the corn were harvested and sold— Price	Value	Net returns per acre would show—	Difference in favor of hogging—
				9c.	$25.74	$20.34	$ 1.34	$ 2.38	$ 0.80	$16.00	Loss $ 5.40	$ 6.74
	97 lbs.	$22.40		10c.	28.60	23.20	4.20	3.20	.90	18.00	Loss 3.40	7.60
20			286	11c.	31.46	26.06	7.06	4.02	1.00	20.00	Loss 1.40	8.46
	$ 3.40	$ 7.83		12c.	34.32	28.92	9.92	4.83	1.10	22.00	Profit .60	9.62
				9c.	$32.13	$25.89	$ 6.89	$ 3.97	$ 0.80	$20.00	Loss $ 2.00	$ 8.89
	121 lbs.	$23.24		10c.	35.70	29.46	10.46	4.99	.90	22.50	Profit .50	9.96
25			357	11c.	39.27	33.03	14.03	6.01	1.00	25.00	Profit 3.00	11.03
	$ 4.24	$ 6.51		12c.	42.84	36.60	17.60	7.03	1.10	27.50	Profit 5.50	12.10
				9c.	$38.61	$31.50	$12.50	$ 5.57	$ 0.80	$24.00	Profit $ 1.40	$11.10
	146 lbs.	$24.11		10c.	42.90	35.79	16.79	6.80	.90	27.00	Profit 4.40	12.39
30			429	11c.	47.19	40.08	21.08	8.02	1.00	30.00	Profit 7.40	13.68
	$ 5.00	$ 5.62		12c.	51.48	44.37	25.37	9.25	1.10	33.00	Profit 10.40	14.97
				9c.	$45 00	$37.05	$18.05	$ 7.15	$ 0.80	$28.00	Profit $ 4.80	$13.25
	170 lbs.	$25.95		10c.	50.00	42.05	23.05	8.58	.90	31.50	Profit 8.30	14.75
35			500	11c.	55.00	47.05	28.05	10.01	1.00	35.00	Profit 11.80	16.25
	$ 5.95	4.99		12c.	60.00	52.05	33.05	11.44	1.10	38.50	Profit 15.30	17.75
				9c.	$51.39	$42.60	$23.60	$ 8.74	$ 0.80	$32.00	Profit $ 8.20	$15.40
	194 lbs.	$25.79		10c.	57.10	48.31	29.31	10.37	.90	36.00	Profit 12.20	17.11
40			571	11c.	62.81	54.02	35.02	12.00	1.00	40.00	Profit 16.20	18.82
	$ 6.79	4.52		12c.	68.52	59.73	40.73	13.64	1.10	44.00	Profit 20.20	20.53
				9c.	$57.87	$48.20	$29.20	$10.34	$ 0.80	$36.00	Profit $11.60	$17.60
	219 lbs.	$26.67		10c.	64.30	54.63	35.63	12.18	.90	40.50	Profit 16.10	19.53
45			643	11c.	70.73	61.06	42.06	14.07	1.00	45.00	Profit 20.60	21.46
	$ 7.61	4.15		12c.	77.16	67.49	48.49	15.85	1.10	49.50	Profit 25.10	23.39
				9c.	$64.26	$53.76	$34.76	$11.93	$ 0.80	$40.00	Profit $15.00	$19.76
	243 lbs.	$27.50		10c.	71.40	60.90	41.90	13.97	.90	45.00	Profit 20.00	21.90
50			714	11c.	78.54	68.04	49.04	16.01	1.00	50.00	Profit 25.00	24.04
	$ 8.50	3.85		12c.	85.68	75.18	56.18	18.05	1.10	55.00	Profit 30.00	26.18
				9c.	$70.74	$59.39	$40.39	$13.54	$ 0.80	$44.00	Profit $18.40	$21.99
	267 lbs.	$28.35		10c.	78.60	67.25	48.25	15.78	.90	49.50	Profit 23.90	24.35
55			786	11c.	86.46	75.11	56.11	18.03	1.00	55.00	Profit 29.40	26.71
	$ 9.35	3.61		12c.	94.32	82.97	63.97	20.28	1.10	60.50	Profit 34.90	29.70
				9c.	$77.13	$64.94	$45.94	$15.12	$ 0.80	$48.00	Profit $21.80	$24.14
	291 lbs.	$29.19		10c.	85.70	73.51	54.51	17.57	.90	54.00	Profit 27.80	26.71
60			857	11c.	94.27	82.08	63.08	20.02	1.00	60.00	Profit 33.80	29.28
	$10.19	3.41		12c.	102.84	90.65	71.65	22.47	1.10	66.00	Profit 39.80	31.85

EXPLANATION: To find the comparative returns from a yield of 35 bushels per acre. Beginning at "35" in the left hand read successive headings and the figures under them to the right as follows: "Amount of supplement required to f bushel yield 170 pounds costing $5.95 which added to the cost of the corn ($19.00) makes a total feed cost of $25.95 or $4. pounds gain. The gain will be 500 pounds, which at 9 cents per pound is worth $45.00. Deducting the cost of the sup $5.95 plus one day's labor moving and caring for the hogs, at $2.00 there is $37.05 left for the corn. After substracting the cost of raising it, $19.00, there is $18.05 remaining as profit which added to the $7.00 already charged for labor ma return for three and one-half days labor, or $7.15 per day.

Following Through: The 35 bushels at $0.80 is worth $28.00; substracting $19.00 for raising plus 12 cents per bushel for g leaves $4.80 profit. Deduct $4.80 profit, from selling the corn at $0.80, from the $18.05 profit from hogging and the di favor of hogging is shown to be $13.25 per acre. In addition to this difference there is plant food left on the acre from which at fertilizer prices is worth $8.65.

Conversely: If the hogs sold at $12.00 per 100 pounds and the corn at $0.80 the difference would be found by subtra from $33.05 leaving a difference of $28.25 per acre in favor of hogging. (Charges explained on the other side.)